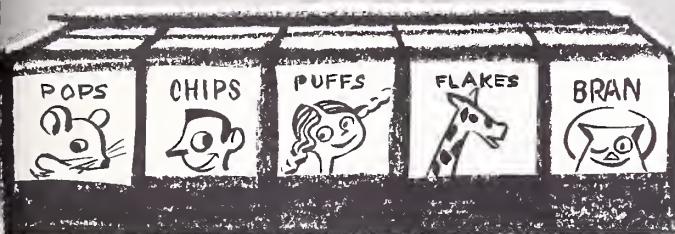




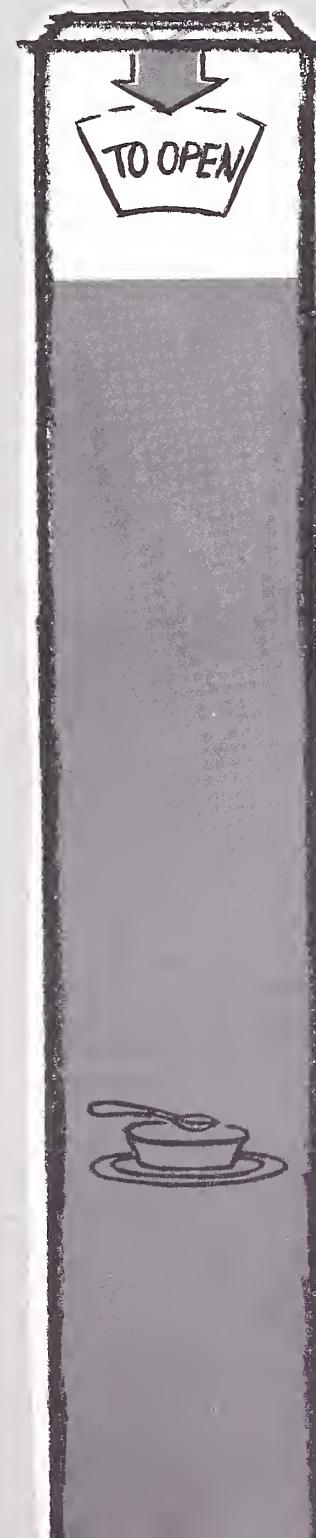
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Changes in the Market Structure of the **BREAKFAST FOODS**



INDUSTRY

PREFACE

In this report important structural changes in the breakfast foods industry from 1947-49 to 1961 are examined. Concentration of the industry, channels of distribution, degree of product differentiation, and conditions of entry are the predominant aspects of market structure considered. The performance, or economic results of changes in the structure of the breakfast foods industry, is measured in terms of technological progress, competition, changes in farm-retail price spreads, and profits. Specific changes in the price spreads and margins of corn flakes and rolled oats, the two most important varieties of breakfast foods, are analyzed in detail.

Data were obtained by personal interviews with breakfast food manufacturers and from many secondary sources as indicated in the bibliography.

The study on which this report is based is part of a broad program of research conducted by the United States Department of Agriculture to reduce the marketing costs and price spread between the farm gate and the consumer's table.

CONTENTS

	<u>Page</u>
Summary	iv
Introduction.	1
Structure of the industry	1
Background	2
Growth	2
Concentration	3
Integration	4
Product differentiation	6
Marketing channels for breakfast foods	6
Methods of procurement and distribution	7
Effects of changes in marketing channels	9
Changes in production of ready-to-eat and cooked breakfast foods	10
Marketing margins of corn flakes and rolled oats	12
Manufacturing margins	16
Wholesale margins	18
Retail prices	19
Distribution of consumer's breakfast food dollar	21
Less to farmer	22
Effect of farm prices of farm value	23
Literature cited	24
Appendix	25
Definitions	25
Explanation of methodology	25

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SUMMARY

The number of establishments manufacturing prepared breakfast foods decreased from 64 in 1947 to 43 in 1958--33 percent. At the same time, the number of companies decreased 58 percent. As the industry became more concentrated, the production of some varieties or types of breakfast foods increased much faster than others. Consumer preference was switching from hot cooked cereals to cold ready-to-eat breakfast foods. Ready-to-eat cereals increased from 45 percent of total production in 1939 to an estimated 65 percent in 1961. Rather than make the change to ready-to-eat breakfast foods, many small manufacturers in the South and Middle Atlantic States either elected or were forced to drop out of the industry. In contrast, no major new company entered the industry during the period of this study.

Larger volumes of grain, grain products, and breakfast foods were flowing through fewer channels in 1961 than previously. Integration and other structural changes leading to increased concentration of the industry were primarily responsible for changes in marketing channels. The further development of supermarkets resulted in a few large retailers obtaining their supplies from centralized warehouses rather than numerous warehouses serving many small retail outlets.

Also, large companies financed, developed, and patented much of their own equipment and processes for producing ready-to-eat breakfast foods. The combined effect of design for large volumes and protection by patents prevented small breakfast food manufacturers from adopting innovations. Existing companies were apparently in a position whereby they could pass the cost of technological advances on to consumers.

Net profits of the breakfast foods industry were higher than in other major food processing industries. Net profits after income taxes averaged over 6 percent of sales in 1961. This indicates a strong bargaining position which was traced to such industry characteristics as the high degree of concentration, product images well fixed in the minds of consumers, and difficulty of entry into the industry. With these characteristics, the industry tends to rely on nonprice competition and to pass the costs incurred on to the consumer.

The average difference between prices received by farmers for grains and prices paid by consumers for corn flakes and rolled oats increased steadily from 1947-49 to a record level in 1961. During this period, the farm value of corn and oats declined while marketing costs generally increased. The retail price of both corn flakes and rolled oats increased 54 percent. The farmer's share of the consumer's dollar spent for corn flakes decreased from 9 percent in 1947-49 to 4 percent in 1961. For rolled oats his share decreased from 34 percent to 17 percent in the same period.

CHANGES IN THE MARKET STRUCTURE OF THE BREAKFAST FOODS INDUSTRY

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INTRODUCTION

The prepared breakfast foods industry is a small outlet for farm products compared with some food industries. Yet, it is an important outlet to the farmers supplying the high quality food grains needed by the industry. Breakfast foods are also important to the manufacturers, even though in some cases cereals may account for only a small portion of their total sales. In 1961, consumption of breakfast foods in the United States was about 1.7 billion pounds, or nearly 10 pounds per person. Manufacturers' sales were an estimated \$500 million and retail sales considerably larger. According to one supermarket study of 40 product groups, over 3 percent of the grocery department dollar margin was derived from the sale of breakfast foods. Breakfast foods rank fourth behind health and beauty aids, canned fish, and snack-party foods in gross profit per retail-shelf foot (2). 1/

Important changes have taken place in the types of breakfast foods produced, the concentration of the industry, and the distribution channels used. In the period studied, 1947-49 to 1961, the farm-retail price spreads increased greatly. Marketing costs increased to an all-time high in 1961. It was found that while retail prices of corn flakes and rolled oats increased 54 percent from 1947-49 to 1961, the increase in retail price of all foods was only 28 percent. Hourly wage rates of production workers in the breakfast foods industry increased 105 percent from 1947 to 1958. Average hourly earnings of employees in all food marketing firms increased only 57 percent. Thus, there are indications that the breakfast foods industry is not performing as efficiently as other food manufacturing industries. The purpose of this study is to explore recent changes of structure and operations of the industry to determine the causes of an increasingly large farm-retail price spread.

STRUCTURE OF THE INDUSTRY

In this study, market structure is considered in terms of the number of breakfast food establishments and companies, their concentration, and their sharing of the total market. These factors are further related to marketing practices, methods, and conditions affecting the performance of the breakfast foods industry in terms of farm prices, costs, and margins. The structure of the industry has changed greatly through time. Although the major structural changes have been in the areas of concentration, numbers, and integration practices, technological progress has probably been the predominant underlying factor leading to the changes in performance found in this industry.

1/ Underscored numbers in parentheses refer to Literature Cited, p. 24.

Background

Until the middle of the 19th century breakfast foods were considered a health food in the United States. Cereals were sold by the ounce in drug stores. In the latter part of the 19th century the idea was conceived that if cereal is good for the ill, it also should be a good food for healthy people. The drive toward promoting and producing breakfast foods commenced, and sales of breakfast foods began to grow. The idea of retail packaging was introduced. Advertising was commenced. The first ready-to-eat cereals were manufactured and the industry was soon booming.

Many small manufacturing plants began operations shortly after the beginning of the 20th century. The successful manufacturers reinvested their profits. National advertising and big sales campaigns were used to stimulate demand for prepared breakfast foods and the per capita demand for cereals was increased to its apparent limits (6). By 1914 there were 137 establishments (9). As the number of establishments grew, competition among them grew also. This forced smaller and less well organized and managed establishments to drop out of the industry or to merge with others. As a result, the number of companies decreased to only 77 in 1927.

Per capita consumption was about the same in the early 1900's as it is today, although it was higher during the 1930's. During the depression years the number of cereal establishments rose rapidly to 110 in 1935. Shortly thereafter, consumer incomes increased, consumer demands changed to non-cereal items, per capita consumption of breakfast foods decreased, and the number of establishments fell to 70 in 1939 (9).

Growth

Industry growth since 1939 has been in size of companies rather than in number of companies. It has been marked by increasing value of production, value added, and value of shipments, and by a decline in the number of establishments, firms, and production workers.

Total consumption of breakfast foods increased after 1939, but the rate of increase was slightly less than the rate of population growth until about 1958. Since then, the increase in total consumption has been about equal to population growth, or about 1.8 percent a year. Thus, population growth has been the major factor leading to the industry's growth in recent years. Other factors causing the slight upswing in total consumption have been: (1) aggressive advertising and promotional activities partially through the educational work of the Cereal Institute, Inc., ^{2/} (2) production of a greater variety of breakfast foods, and (3) creation of new product images, such as the suggestion of breakfast foods as between-meal snacks and the use of new varieties of high-protein, low-fat breakfast foods by people on diets.

Value added to shipments by manufacturers has steadily increased (table 1). In 1947 the value added to shipments was 46 percent of the total value of shipments. In 1958 it had risen to 53 percent. The percentage of value added to total value of

^{2/} The Cereal Institute, Inc., of Chicago, Ill., functions in behalf of its sponsors, members of the breakfast foods industry. Its major emphasis is on advertising directed towards school children recommending adequate breakfasts.

Table 1.--Establishments, employees, value added and shipped, breakfast foods industry, 1939, 1947, 1954, and 1958

Year	Establishments	Employees		Value	
		All	Production	Added by manufacturer	Shipments
	Number	Number	Number	Number	1,000 dollars
1939.....	70	9,033	7,458	70,349	128,383
1947.....	64	11,276	9,496	130,188	284,666
1954.....	46	11,534	9,149	172,283	345,834
1958.....	43	10,927	8,490	230,929	432,974

Source: Census of Manufactures, 1947, 1954, and 1958.

shipments is higher for breakfast foods than for any of the other grain mill products. 3/ Three important reasons for this are: (1) the high degree of processing required to produce breakfast foods, (2) the large amount of other food ingredients added, and (3) the cost of packaging breakfast foods in small, convenient sizes, all of which require additional labor and equipment.

Both the value of shipments (value added by the manufacturer plus other cost items such as materials, parts, containers, supplies, cost of resales, fuels, and electricity) and the value added by manufacturers showed an average annual increase of 13 percent from 1939 to 1958. However, from 1947 to 1958 the growth rate averaged only slightly over 4 percent, indicating a rapid leveling off.

Change in monetary values is another measurement of growth (8). To measure this an index was constructed by weighting annual physical output data for breakfast food products by estimates of the value added in manufacture based on data from the Census of Manufacturers. This growth index rose from 101 in 1947 to 110 in 1960, an increase of about 8 percent. This is a slower rate of growth than for the food industry as a whole.

Concentration

As the industry grew the number of establishments decreased. The decline was 33 percent between 1947 and 1958 (table 2). Most of the establishments leaving the industry during this period were in the Southern and Middle Atlantic States. They were mostly small establishments employing from 1 to 19 employees each. Major causes of the decrease in number of establishments are believed to be technological changes and a shift in consumer preference. Much of the technological advance was through industry-invented and industry-patented equipment. The largest companies financed the development of their own equipment and processes. Smaller establishments could not adopt the innovations because they were designed for large operations and also because of patent rights.

3/ Grain mill products are designated by the U. S. Bureau of the Census to include: Flour and other grain mill products, prepared feeds for animals and fowls, cereal preparations, rice millings, blended and prepared flour, and wet corn milling.

Table 2.--Number of breakfast food establishments and companies, 1947, 1954, and 1958

Year	Establishments			Companies		
	Number	Percent decrease from 1947		Number	Percent decrease from 1947	
1947.....	64	--		55	--	
1954.....	46	28		37	33	
1958.....	43	33		23	58	
.....						

Source: Census of Manufactures 1947, 1954, and 1958.

The number of breakfast food companies decreased 58 percent between 1947 and 1958 (table 2). This was greater than the decrease in the number of establishments owned by the companies.

Between 1947 and 1958 there was a similar decline in 16 of 21 food processing industries for which comparable data are available (8). Decreases ranged from a low of 6 percent in the macaroni and spaghetti and the cane sugar refining industries to a high of 58 percent in the cereal breakfast foods industry. Thus while the breakfast foods industry has not been alone in this respect, it has undergone the largest percentage change.

The slow rate of growth in recent years has accounted, at least partially, for the decline in number of establishments and companies. Companies have merged and concentrated their production in their most efficient and best located establishments. Frequently smaller and perhaps less efficient plants have been closed. As a result, the average capacity per plant and production per company has increased.

Because of the decline in the number of establishments and companies, a high level of concentration was reported in the breakfast foods industry by 1958 (16). Of 42 classes of food and kindred products industries it was one of the most concentrated industries in terms of value of shipments made by the four largest companies. In 1958, four companies accounted for 83 percent of the total industry value of shipments and for 78 percent of all employees in the industry. In 1961, an estimated 80 percent of the dry cereal market was shared by three large companies (4).

From 1939 to the present the demand for ready-to-eat breakfast foods has increased steadily while the demand for cooked breakfast foods has declined. The small manufacturers in the South and Middle Atlantic States that did not or could not make the change to ready-to-eat breakfast foods, were forced to drop out of the industry. Several of the older and smaller establishments closed because they could not compete with newer and larger establishments, which apparently could operate at lower unit costs and had economies of scale that more than offset greater distribution costs. A change in the type of corn available to the industry -- from white to yellow -- also affected some small Southern and Middle Atlantic manufacturers.

Integration

As in other industries, integration is used as a tool of nonprice competition in the breakfast foods industry. Integration has changed costs and channels of distribution. The degree of integration varies among manufacturers and by type of grain

in the breakfast foods industry. Many manufacturers have integrated both backward (into initial handling and processing of the grain) and forward (into distribution of the manufactured product). As the number of companies and manufacturing establishments decline, the degree of both backward and forward integration tends to increase.

The industry has integrated into initial processing operations and to some extent into country elevator operation. It is estimated that as much as 50 percent of the grain and grain products used by the industry is channeled through company-owned plants that do initial processing, and that about 7 percent of the industry's grain is handled in company-owned country elevators. 4/ Backward integration is a competitive tool permitting, to some extent, selection of higher quality grain, better control and faster movement of grain, and possibly some cost advantages. As a result of backward integration, manufacturers must take title to their supplies for a longer period of time. While this is costly in terms of risk and storage, the industry believes that this cost is offset by the assurance of a supply of higher quality grain.

Forward integration is limited primarily to wholesale warehouses or distribution centers. Nearly 90 percent of the value of shipments flows through manufacturer-owned sales offices and branches (table 3). This represents about a 50-percent increase since 1939 when 62.3 percent of total sales were channeled through wholesale branches owned by manufacturers (5).

Table 3.--Manufacturers' sales of breakfast foods, by type of outlet, 1958

Outlet	Sales	Percentage of total sales
	Million dollars	Percent
Sales offices, sales branches, and administrative offices of the same company.....	373	86
Wholesaler, retail stores owned by the same company, and all other retail stores:	56	13
Industrial, constructional, institutional, and commercial users; and State and local Governments.....	1	<u>2/</u>
Federal Government.....	2	<u>2/</u>
Exports.....	1	<u>2/</u>
Individual (household users) and farmers...	<u>1/</u>	<u>2/</u>
Total.....	433	100

1/ Less than \$1 million.

2/ Less than 1 percent.

Source: 1958 Census of Manufactures, Vol. 1, Summary Statistics.

4/ Unpublished statistics of the North Central Grain Marketing Technical Committee for 1960. Grain Marketing Institutions and the Structure of Grain Markets. Project NCM-30.

Forward integration into distribution centers is a means of nonprice competition used to expedite service to retailers. Presently, from the time breakfast food is manufactured until it is purchased from the grocery shelf an average of about 6 weeks elapses. As the degree of forward integration increases this period probably will become shorter.

Not all changes in the marketing channels have increased the degree of integration. The change to yellow corn was followed by a spatial separation of functions. Formerly, breakfast food manufacturers bought whole white corn and processed it. In the last few years the function of producing flaking grits has been assumed by dry corn millers who usually are located near production areas and may or may not be affiliated with the manufacturers. This has resulted in a shorter movement of whole corn; only flaking grits move from the millers to the manufacturers. Transportation savings as well as a higher degree of specialization by breakfast food manufacturers are perhaps the major forces causing this separation of processing functions.

The rapid trend toward ready-to-eat oat breakfast foods also has led to the separation of processing functions. Processors ship oat flour to manufacturers of extruded oat breakfast foods; the quantity may be expected to increase as the volume of ready-to-eat oat breakfast food increases. However, rolled oats still represent by far the largest volume of the oat breakfast foods.

Product Differentiation

The breakfast foods industry may be classified as a differentiated product industry (3). This is a form of imperfect competition whereby varieties of breakfast foods are differentiated by such means as patents, brand names, and advertising. Each manufacturer in the breakfast foods industry strives to offer a product different from that of his competitors. The distinction may be through a real difference in the product, or through differentiated advertising -- inclusion of gifts and trinkets in packages, coupons, special offers, etc. -- or personal selling techniques. While in a sense each manufacturer's product is different from all the varieties of cereal produced by other manufacturers, the degree of consumer preference apparently is small, suggesting a high rate of substitution of one variety for another. To maintain market share, manufacturers must pay close attention to competitors' prices. In the breakfast foods industry, where there are few competitors with differentiated products, price competition could be extremely important. A manufacturer could cut prices in an attempt to gain a larger share of the market. However, if this were done, competitors could also lower the prices of their differentiated products, and all would lose. This kind of price cutting is not generally practiced in the breakfast foods industry. Instead, retail prices appear to be at a somewhat uniform level and nonprice competition seems to be most prevalent.

MARKETING CHANNELS FOR BREAKFAST FOODS

Breakfast food marketing channels are less complex now than they were 20 years ago (5). As the industry becomes more concentrated and has fewer small establishments, larger volumes of grain move through fewer channels.

Near the consumption end of the marketing channels, the growth of supermarkets has affected the flow of breakfast foods. There are fewer small retail stores and large retailers are procuring their supplies from centralized warehouses. New

breakfast food distribution centers are being established near consumption areas to meet the demands of the large retailers.

Figure 1 shows the flow through marketing channels of the three major grains and grain products -- corn, oats, and wheat -- which account for nearly 90 percent of all breakfast foods. This composite flow of corn, oats, and wheat used in the breakfast foods industry varies considerably from the flow pattern of these grains in all uses (1).

Methods of Procurement and Distribution

Of all grains utilized in the manufacture of breakfast foods in 1961, corn and corn products were about 20 percent, oats and oat products were 43 percent, and wheat and wheat products were 26 percent. Rice was the major "other" grain used. Also, manufacturers used small quantities of malt barley and soy flour.

Breakfast food manufacturers are procuring an increasing amount of grain from country elevators, and are bypassing the terminal elevators because the blending operations at terminals result in minimum quality grain within given grades. Manufacturers procure supplies from country points at harvest time rather than wait for grain to flow through normal channels. As a result, major companies have had to build a large amount of storage space to store supplies for longer periods of time.

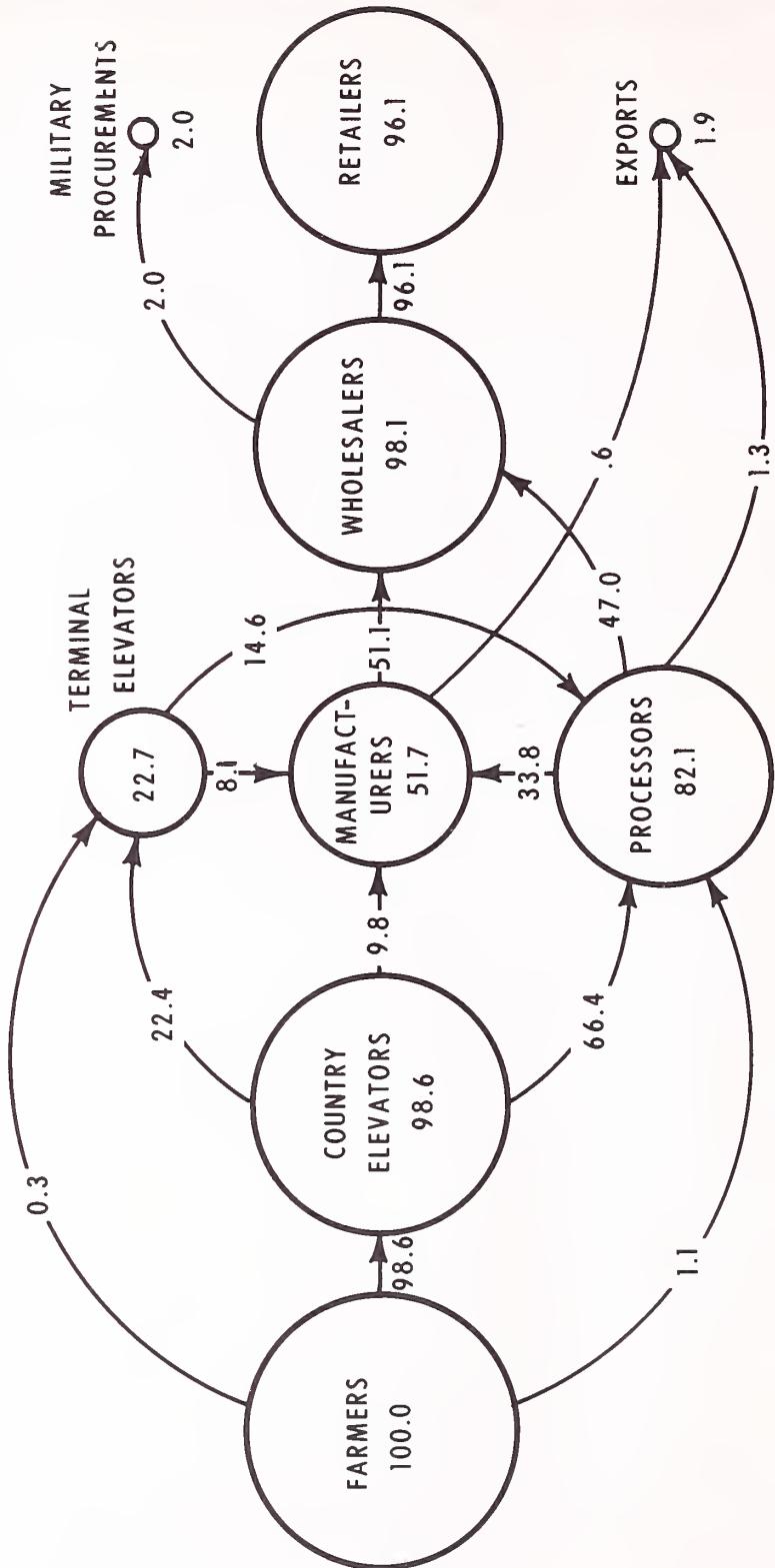
Corn

In 1961 an estimated 353 million pounds of corn was channeled from the farm to the consumer. Nearly all of this amount flowed through country elevators in the form of whole grain. An estimated 95 percent bypassed terminal markets and was channeled from country elevators directly to dry corn millers. The millers received the remainder of their supply from terminal elevators and farms; the former were predominant. Thus, the dry corn millers processed the entire supply of corn used by the breakfast food manufacturers. From the dry corn miller, corn in the form of flaking grits moved to the breakfast food manufacturers. After the corn was further processed into various types of breakfast foods it was boxed and shipped to distribution centers or wholesale warehouses. An estimated 97 percent moved to wholesalers and on to retail outlets. About 2 percent was procured by the government and less than 1 percent was exported (13).

This change from the former practice of buying whole corn has at least three important advantages for breakfast food manufacturers. Transportation charges for the smaller volumes of flaking grits are lower. The manufacturers do not have to dispose of the corn byproducts. And they now specialize fully in final processing which is an advantage to them in this competitive business.

Another major change in procurement has been the shift from white corn to yellow corn in making breakfast foods. Since World War II the supply of white corn has not been adequate to meet the needs of breakfast food manufacturers and they have been using primarily yellow corn even though it is not so well suited for manufacturing breakfast foods as white corn. Yellow corn is bred primarily for animal feed rather than for food uses, and it has a higher oil content and a lower yield of flaking grits than white corn. Also, present day rapid-harvesting, quick-drying methods result in much cracking and crumbling of the kernel. Since per acre yields of

MARKETING CHANNELS OF CORN, OATS, AND WHEAT USED IN BREAKFAST FOODS



ALL FIGURES EXPRESSED AS PERCENTAGE OF TOTAL VOLUME OF BREAKFAST FOODS MANUFACTURED, 1960-61 DATA.

U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 1890-63 (4) ECONOMIC RESEARCH SERVICE

Figure 1

yellow hybrid corn apparently more than offset the price advantage of producing white corn, farmers have little incentive to produce white corn. Unless higher premiums are offered for white corn, breakfast food manufacturers will have to continue to use yellow corn. This shift to yellow corn also has lowered the farm value per 12-ounce package of corn flakes.

Oats

An estimated 750 million pounds of oats was channeled from farms to consumers in 1961. As with corn, country elevators handled nearly all the oats. However, from this point the channels differed. Terminal markets received an estimated 24 percent of the oats compared with only 5 percent of the corn.

Usually, the initial processors are also the final manufacturers in the oats breakfast food industry. About 87 percent of the oats -- mostly rolled oats -- was processed ready for consumption at the initial processing point. The remainder, in the form of groats or flour, is channeled to manufacturers at other locations to be rolled, flaked, or extruded. The oat breakfast foods produced at the initial processing point continued through normal channels to wholesalers and retailers as did corn breakfast foods.

Oats were the major breakfast food exported. Nearly 4 percent of the U. S. production of oatmeal and rolled oats and about 3 percent of total oat breakfast foods production was exported in 1961. However, the trend in exports of oat breakfast foods was downward. Less than half as much packaged oatmeal, groats, and rolled oats was exported in 1961 as 12 to 15 years ago (13). Domestic distribution, which is an estimated 97 percent of the oat breakfast foods, has essentially the same pattern as that for corn breakfast foods.

Wheat

An estimated 447 million pounds of wheat was channeled from the farm to the consumer in 1961 and country elevators handled nearly all of it. Terminal elevators handled an estimated 46 percent, most of which was received from country elevators.

Since breakfast food manufacturers received mostly whole wheat, only a small amount of the total volume of wheat for breakfast foods flowed through flour mills. Manufacturers bought an estimated 45 percent of their supply from terminal elevators and 54 percent from country elevators. The breakfast food industry took as much wheat as they could from country elevators in order to get a high quality food grain and to get soft white wheat before it either lost its identity or become infested. Desirable soft white wheat is presently in short supply in manufacturing areas.

Wheat breakfast foods are distributed by manufacturers through the same channels as corn and oat breakfast foods. About 1.5 percent of the total production was exported in 1961. This was about 6 times as much as was exported in 1950 (13).

Effects of Changes in Marketing Channels

Important changes in distribution methods have taken place in recent years. As the number of breakfast foods increases, retail stores must carry smaller inventories of each variety. Faster and more frequent delivery service is demanded

to keep grocery shelves stocked. Rather than ship small lots to individual retailers at consumption points, which is costly and time consuming, some manufacturers have established distribution centers in consumption areas. While this is costly, the added service in expediting deliveries to retailers is considered by manufacturers as sufficient to warrant the cost. In 1961, an estimated 90 percent of all breakfast foods was channeled into sales branches owned by manufacturers (12). More branches are being established. The ability to take advantage of carload shipping rates to consumption areas partially offsets this cost, but the net effect of providing this added service resulted in added costs and a higher price for cereal breakfast foods.

Flow changes have resulted in both increases and decreases in manufacturing costs, excluding the effect of overall price increases. Increases in costs have resulted from added costs of storage and the costs of establishing distribution centers. Decreases in costs are evident in savings because of transportation of processed products rather than whole grain and movement by carload rather than less than carload rates to distribution centers. The net effect of flow changes on price spreads is not measurable, since a definite monetary value cannot be placed on accompanying services.

The trend toward ready-to-eat breakfast foods has led to greater utilization of manufacturing capacity in ready-to-eat breakfast food plants than in cooked-cereal plants. This may explain why the average manufacturing margin for corn flakes increased 43 percent from 1947 to 1961 while the margin for rolled oats increased 96 percent.

The farm prices of food grains used by breakfast food manufacturers were not greatly affected by changes in marketing channels, but they were affected by the change from white corn to yellow corn. For corn flakes, the farm value per 12-ounce package fell sharply. At 1961 average corn prices, the farm value would have been 2.6 cents based on white corn prices and yield, but was only 1.0 cent based on yellow corn prices and yields of flaking grits.

Changes in the export pattern can be partially attributed to changes in eating habits and the establishment of manufacturing plants in foreign countries by U. S. manufacturers. U. S. manufacturers have rapidly expanded their operations in Venezuela, Guatemala, Brazil, West Germany, England, Australia, Canada, and other countries. Among other reasons, they have expanded operations into Europe and England to be in a favorable position with regards to the European Economic Community and the European Free Trade Association. While the foreign investments of breakfast food manufacturers apparently have not greatly affected their exports from this country, these investments are an important factor in their total operation.

CHANGES IN PRODUCTION OF READY-TO-EAT AND COOKED BREAKFAST FOODS

Intensive advertising and sales promotion by the breakfast foods industry have brought about consumer acceptance of convenient, ready-to-eat cereals. As demand for ready-to-eat cereals increased, the industry increased its production capacity.

Shortly after World War II the production of ready-to-eat breakfast foods became greater than the production of cooked breakfast foods (those that require cooking). By 1958, ready-to-eat breakfast foods accounted for 63 percent of the total produced (table 4). Apparently the trend towards ready-to-eat breakfast foods has continued through 1961.

Table 4.--Production of ready-to-eat and cooked breakfast foods,
1939, 1947, 1954, and 1958

Type of breakfast food	1939	1947	1954	1958
	Million pounds	Million pounds	Million pounds	Million pounds
	Percent	Percent	Percent	Percent
Ready-to-eat:	573	45.33	699	50.87
Cooked.....:	691	54.67	675	49.13
Total.....:	1,264	100.00	1,374	100.00

Source: National Food Situation, February 1961, U. S. Dept. Agr., Agr. Mktg. Serv., pp. 19.

From 1939 to 1958, consumption of ready-to-eat breakfast foods rose from 4.4 pounds per capita to 6.0 pounds. Over the same period, per capita consumption of cooked breakfast foods declined from 5.3 pounds to 3.5 pounds (7).

Production of ready-to-eat corn cereal increased from 195 million pounds in 1947 to 308 million pounds in 1958 (7), and per capita consumption increased from 1.3 pounds to 1.8 pounds, or about 3 percent per year. Although production of cooked oats cereals increased from 415 million pounds in 1947 to 455 million in 1958, per capita consumption decreased from 2.9 pounds to 2.6 pounds.

Ready-to-eat breakfast food accounted for 80 percent of dollar sales in 1958, reflecting higher processing costs and possibly higher profits than for cooked breakfast foods (4).

The causes of this change to ready-to-eat cereals are important factors in explaining the present flow of grain and grain products into and away from the industry, changes in the marketing bill, and thus in explaining the changes in structure and performance of the industry. Some of the major reasons for the trend towards ready-to-eat breakfast foods include: Substitution of cold cereal for hot cereal, aggressive advertising by manufacturers of ready-to-eat breakfast foods, population growth in lower age brackets, promotion of adult demand for high protein breakfast foods, convenience advantage of ready-to-eat breakfast foods, greater variety available in public eating places, and competitive forces within the industry.

Substitution of cold for hot cereals has been especially influential. Aggressive advertising and sales promotion by manufacturers apparently has stimulated the demand for ready-to-eat breakfast foods by both young and old.

Ready-to-eat breakfast foods are not only convenient to serve; they are also packaged in convenient sizes. This, has made ready-to-eat breakfast foods a favorite for single servings in public eating places and for between-meal snacks at home.

The sugar-coated or otherwise flavored breakfast foods are gaining rapidly in volume. Such cereals were marketed as early as 1939, but it was not until recent years that they gained popularity. Industry sources point to them as the fastest growing type of breakfast food. In 1950 they accounted for 5 percent of the total poundage of ready-to-eat breakfast foods. By 1961 their share had risen to 21 percent (4).

In addition to the cost of sugar, many other costs are involved in the manufacture of pre-sweetened breakfast foods. While the wholesale price of refined sugar did not increase as much as margins of breakfast food manufacturers in the period 1947-49 to 1961, other cost items, including equipment for the pre-sweetening process, space requirements, additional manufacturing steps which increase labor and operating costs, and losses of the finished product because of extra handling, are also involved in the manufacture of pre-sweetened breakfast foods. The result is an increase in the manufacturer's gross margin. However, since neither separate costs of producing pre-sweetened cereals nor the wholesale prices of these cereals are available, it is impossible to determine the relation of margins to costs.

Nonprice competition within the industry also has been an important factor leading to the trend towards ready-to-eat breakfast food. Each large company has a staff of research personnel continually working on new varieties of breakfast foods. When a new type of breakfast food reaches the grocery shelf it is not long before several companies have a similar, yet differentiated, product on the shelf to compete for consumer acceptance. Thus, timing is important in maintaining market shares.

In 1947 oat products were a little over 60 percent of the total production of cooked breakfast foods and by 1958 had risen to almost 75 percent. While the volume of all cooked breakfast foods decreased over 25 percent, the volume of oat products declined only 10 percent.

Consumption of wheat breakfast foods was more than a third lower in 1958 than in 1947. Consumption of wheat and other cooked breakfast foods, not including oats products, declined from 38 percent of the cooked breakfast food volume in 1947 to only 25 percent of the volume in 1958.

Consumption of ready-to-eat breakfast foods made of corn, oats, and "other and mixed grains" (mainly rice) increased rapidly between 1947 and 1958. The aggregate increase in consumption of all ready-to-eat breakfast foods was 13 percent between 1947 and 1958. In 1947 corn cereals were about 27 percent of all ready-to-eat breakfast foods, wheat cereals about 44 percent, and "other and mixed grains" over 29 percent. By 1958 corn cereals increased to 30 percent of the total ready-to-eat breakfast foods production, wheat cereals declined to 33 percent, and "other and mixed grains" increased to 37 percent.

Apparently ready-to-eat wheat breakfast foods are losing their share of the cold cereal market to new varieties of oats cereals. This trend is likely to continue unless new tasty varieties of wheat cereal are produced. At present, ready-to-eat oat breakfast foods are the fastest growing variety of breakfast food and account for a large part of the increase in consumption of ready-to-eat breakfast foods. However, corn flakes continue to be the biggest selling cold cereal with an estimated 85 to 90 percent of the ready-to-eat corn breakfast foods market.

MARKETING MARGINS OF CORN FLAKES AND ROLLED OATS

Although the performance of an industry may be measured by production efficiency, technological progress, product suitability, and other dimensions, the most important measurements of performance are the resulting costs and margins. It is in these areas that the effects of changes in the structure and conduct of the industry are most important to the human elements involved in marketing. The changes in price spreads and margins for corn flakes and rolled oats have been estimated from available data (tables 5 and 6).

Table 5.—Corn flakes: Estimated net farm value, cost to manufacturer, wholesale and retail prices, assembler's, manufacturer's, wholesaler's and retailer's gross margins, farm-retail price spread and farmer's share of the retail price of a 12-ounce package, 1947-49 and annual 1950-61 1/

Year	Farm value 2/	Assembler and dry corn processor's margin 3/	Cost to manufacturer 4/	Manufacturer's margin 5/	Manufacturer's sales value 6/	Wholesale margin 7/	Retail price 8/	Margin 9/	Retail price 10/	Retail price 10/ spread 11/	Farm share 12/
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Percent
1947-49	1.5	0.7	2.2	12.8	15.0	1.3	16.3	.8	17.1	15.6	9
1950	1.2	.7	1.9	14.8	16.7	1.2	17.9	.8	18.7	17.5	6
1951	1.5	.8	2.3	16.2	18.5	1.2	19.7	.9	20.6	19.1	7
1952	1.4	.8	2.2	16.3	18.5	1.2	19.7	1.8	21.5	20.1	7
1953	1.4	.6	2.0	16.5	18.5	1.2	19.7	2.0	21.7	20.3	6
1954	1.6	.7	2.3	16.2	18.5	1.2	19.7	2.2	21.9	20.3	7
1955	1.4	.7	2.1	15.9	18.0	1.7	19.7	2.3	22.0	20.6	6
1956	1.3	.8	2.1	15.6	17.7	2.2	19.9	2.1	22.0	20.7	6
1957	1.2	.7	1.9	16.9	18.8	2.7	21.5	1.7	23.2	22.0	5
1958	1.1	.8	1.9	18.1	20.0	3.3	23.3	2.1	25.4	24.3	4
1959	1.1	.7	1.8	18.2	20.0	3.3	23.3	2.3	25.6	24.5	4
1960	1.0	.8	1.8	18.2	20.0	3.3	23.3	2.5	25.8	24.8	4
1961	1.0	.7	1.7	18.3	20.0	3.3	23.3	3.1	26.4	25.4	4

1/ Conversion ratio: A 12-ounce package of corn flakes requires 2.87 pounds of corn or 0.0513 bushel, based on an average yield of 17 pounds of flaking grits per bushel.
 2/ Payment to farmer for 2.87 pounds of corn less by-product value.
 3/ Difference between net farm value and cost to manufacturer.
 4/ Derived from Census of Manufactures for 1947, 1954, and 1958. Other years weighted by Chicago terminal prices of #1 yellow corn. (Flaking grits purchased f.o.b. dry corn miller.)
 5/ Gross difference between manufacturer's cost of flaking grits and manufacturer's sales value.
 6/ Value per 12-ounce package based on value per pound of total shipments including interplant shipments.

7/ Gross margin between manufacturer's sales value and wholesale price.
 8/ Wholesale price computed as follows: Source BLS. Average price for index base period was \$2.61 for 24.8-ounce packages of corn flakes to wholesaler, jobber, or chainstores, carlots, freight prepaid. Indexes for years 1950-61 times price for base period equals price per case for each year. Ounces net weight per case divided into price per case equals price per ounce. Price per ounce times 12 ounces equals price per 12-ounce package.
 9/ Gross margin between wholesale and retail price (15).
 10/ Retail prices based on published Bureau of Labor Statistics annual retail prices (14).
 11/ Difference between net farm value and retail price.
 12/ Net farm value as percent of retail price.

Table 6.--Rolled oats: Estimated net farm value, cost to manufacturer, wholesale and retail prices, assembler's, manufacturer's, wholesaler's and retailer's gross margins, farm-retail price spread and farmer's share of the retail price of an 18-ounce package, 1947-49 and annual 1950-61 ^{1/}

Year	Farm value ^{2/}	Assembler's margin ^{3/}	Cost to manufacturer ^{4/}	Manufacturer's margin ^{5/}	Manufacturer's sales ^{6/}	Wholesale price ^{7/}	Retail price ^{8/}	Retail price ^{10/}	Retail price ^{11/}	Farm-retail price spread ^{9/}	Farm-share ^{12/}
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Percent
1947-49	4.9	.7	5.6	4.9	10.5	1.4	11.9	2.6	14.5	9.6	34
1950	4.3	1.0	5.3	5.2	10.5	1.7	12.2	2.5	14.7	10.4	29
1951	4.8	.8	5.6	5.8	11.4	2.1	13.5	2.5	16.0	11.2	30
1952	4.7	.6	5.3	6.1	11.4	2.1	13.5	2.9	16.4	11.7	29
1953	4.4	.6	5.0	6.4	11.4	2.1	13.5	3.1	16.6	12.2	27
1954	4.5	.8	5.3	6.4	11.7	2.2	13.9	2.9	16.8	12.3	27
1955	3.9	.6	4.5	7.4	11.9	2.3	14.2	3.1	17.3	13.4	23
1956	3.9	.9	4.8	7.5	12.3	2.3	14.6	2.9	17.5	13.6	22
1957	4.0	1.0	5.0	8.3	13.3	2.9	16.2	3.2	19.8	15.8	20
1958	3.6	1.0	4.6	8.7	13.3	2.9	16.2	4.1	20.3	16.7	18
1959	3.7	1.0	4.7	8.8	13.5	3.1	16.6	3.8	20.4	16.7	18
1960	3.8	1.0	4.8	9.6	14.4	3.3	17.7	4.3	22.0	18.2	17
1961	3.8	1.0	4.8	9.6	14.4	3.3	17.7	4.7	22.4	18.6	17

^{1/} Conversion ratio: An 18-ounce package of rolled oats requires 2.31 pounds of oats or 0.0722 bushel based on an average yield of 15.6 pounds of rolled oats per bushel. ^{2/} Payment to farmer for 2.31 pounds of oats less by-product value. ^{3/} Difference between net farm value and cost to manufacturer.

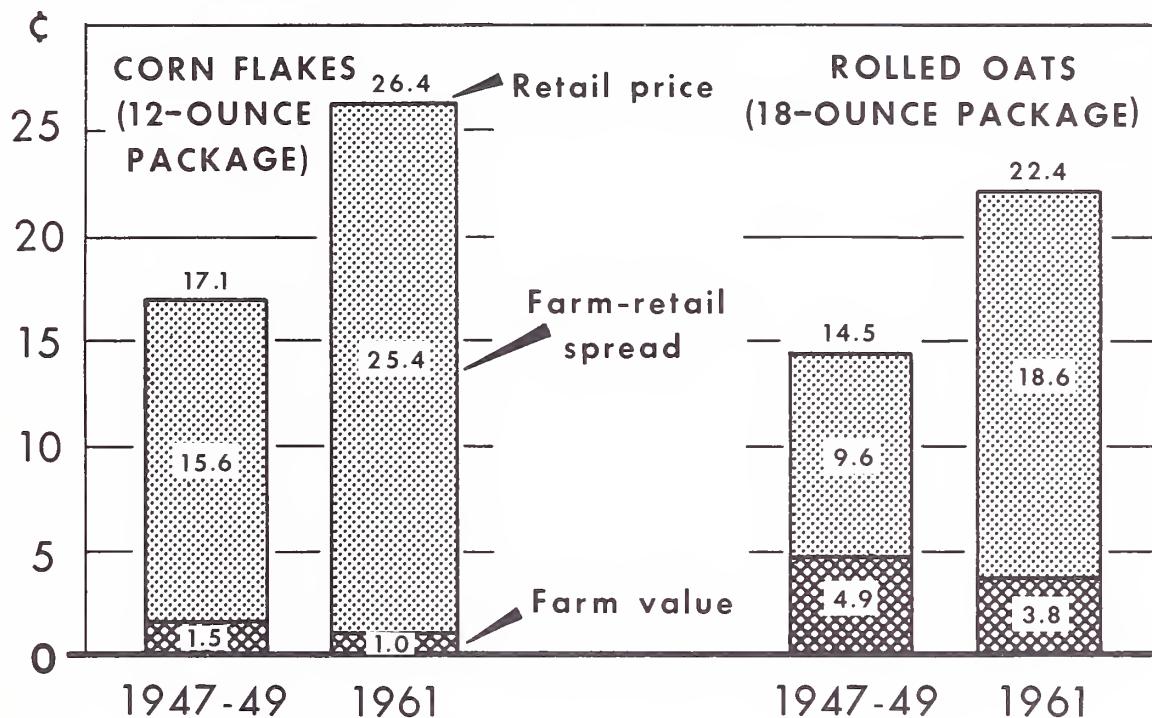
^{4/} Cost of oats to manufacturer is based on U. S. Bureau of Census, Census of Manufactures, with data adjusted according to IRS Statistics of Income. (Cost is f.o.b. origin.) ^{5/} Difference between manufacturer's cost of oats and the manufacturer's sales value of an 18-ounce package of rolled oats.

^{6/} Manufacturer's sales value per 18-ounce package based on BLS wholesale price index less estimated wholesale margin. ^{7/} Gross margin between manufacturer's sales value and wholesale price. ^{8/} Wholesale prices based on published Bureau of Labor Statistics annual wholesale price indexes: 1947-49 average price was \$2.38 (delivered basis) for 24 medium sized packages (15).

^{9/} Gross margin difference between wholesale and retail price. ^{10/} Retail prices based on published Bureau of Labor Statistics annual retail prices (14). ^{11/} Difference between net farm value and retail price. ^{12/} Net farm value as percent of the retail price.

The "farm-retail price spread" or "marketing margin" is the difference between the price the consumer pays for corn flakes or rolled oats in the grocery store and the price the farmer receives for the equivalent of corn and oats at his farm gate (fig. 2). The marketing margin includes charges made by all agencies for assembling, processing, manufacturing, storage, transportation, wholesaling, and retailing.

FARM VALUE AND FARM RETAIL PRICE SPREAD, CORN FLAKES AND ROLLED OATS



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Figure 2

Marketing margins of individual breakfast food manufacturers may vary considerably because of differences in procurement and distribution channels, the proportion of cereal items in a company's product mix, and other practices and policies employed. Price spreads of corn flakes and rolled oats, as explained in this report, are based on U. S. averages. Corn flakes and rolled oats, which together account for nearly 50 percent of the total volume of breakfast foods manufactured, have been affected by changes in the structure of the industry. They also have been affected by increases in labor, transportation, and other costs. Between 1947-49 and 1961, the price spread for corn flakes increased from 15.6 cents to 25.4 cents per 12-ounce package and for rolled oats from 9.6 cents to 18.6 cents per 18-ounce package. As the price spread increased, the farmer's share decreased sharply. As shown in tables 5 and 6, the farmer's share of the retail price of corn flakes was only 4 percent of the retail price in 1961. The farmer's share of the rolled

oats retail price compared more favorably with that for other grain mill products at 17 percent in 1961. 5/

Manufacturing Margins

The manufacture of breakfast foods may involve one or more of the following processes: cleaning, flavoring, cooking, shaping by flaking, popping, shredding, extruding, puffing, drying, toasting, and coating. Since breakfast foods are so highly processed a large amount of labor, equipment, materials, and other food items are required.

Owing to the nature of the product, the value added by manufacturers accounts for over 53 percent of the value of shipments. This is a slightly higher percentage than for bread and related products, blended and prepared flour, wet corn milling, or the cigarette industry and far greater than for the rice milling, flour and meal, meat packing, and fluid milk industries.

Large increases in manufacturers' margins occurred from 1947-49 to 1961. The margin for rolled oats increased 96 percent. For corn flakes the increase was 43 percent. These large increases are primarily due to price pyramiding from a lower base price for rolled oats. In absolute terms the increase was 5.5 cents for a 12-ounce package of corn flakes and 4.7 cents for an 18-ounce package of rolled oats. Thus, the manufacturer's margin increased more for corn flakes than for rolled oats in the period studied, although the percentage increase was larger for rolled oats.

Reasons for the change in the performance of the breakfast foods industry can be traced largely to the components of the value added and to increasing wage rates. The ratio of value added to the value of shipments increased from about 46 percent in 1947 to 53 percent in 1958 and is apparently continuing to increase as new varieties of breakfast foods requiring new processing methods are manufactured. Basically, the process of manufacturing corn flakes and rolled oats did not change from 1947 to 1961. Therefore, the ratio between value added and value of shipments should have remained nearly constant for these two products. The average cost of manufacturing breakfast foods other than corn flakes and rolled oats is slightly more than 2 cents per ounce, whereas these costs average a little more than 1 cent for corn flakes and rolled oats. Thus, since this cost difference is not reflected in the retail prices it is evident that pricing policies have allowed some of the costs of developing new varieties of breakfast food or new kinds of packaging to be absorbed in the wholesale and retail prices of corn flakes and rolled oats.

Costs of production labor increased 105 percent from an average of \$1.29 per hour in 1947 to \$2.64 per hour in 1958. In the same period the average hourly earnings of employees in all food marketing firms increased only 57 percent, from \$1.03 to \$1.82 per man hour. Thus, the more rapid increase in wage rates has been one of the factors in increasing manufacturing margins. The increase in personnel costs is further illustrated in table 7. Payroll as a percentage of total sales increased from 12.6 percent in 1947 to 15.1 percent in 1961. In the same period compensation of executives increased from 0.8 percent to 1.8 percent of gross sales.

5/ In 1961 the farmer's share of the other grain mill products was as follows: Wheat for white bread, 11 percent; soda crackers, 13 percent; corn meal, 20 percent; and white flour, 33 percent. (The Marketing and Transportation Situation, MTS-144, February 1962, U. S. Dept. Agr., Econ. Res. Serv.)

Thus, wages and salaries account for much of the large increase in manufacturing margins. Increases like these in an industry indicate either a strong bargaining position by employee unions or the favorable position of management to grant above-average wage rates.

High advertising and other selling expenses also caused manufacturing margins to be large (table 7). Although the increase since 1947 has not been large, advertising costs were higher than for most food industries at the beginning of the period studied.

Table 7.--Costs and profits of breakfast food manufacturers as percentage of total sales, 1947 and 1961

Itemized costs and net profit	Percentage of total sales	
	1947	1961
Cost of goods purchased:		
Corn, oats, wheat, and barley.....	34.0	14.1
Sugar.....	7.0	{ 3.8
Paperboard, folding, and corrugated boxes.....		{ 9.7
Transportation (from processor or other points of origin).....	1.9	2.5
Other procurement costs.....	13.6	11.2
Total.....	56.5	41.3
Operating expenses:		
Payroll.....	12.6	15.1
Fuel and electricity.....	1.1	.9
Rent paid, repairs, depreciation amortization, interest paid, and taxes (other than income).....	2.3	3.4
Compensation to officers and pensions.....	.8	1.8
Plant and equipment.....	1.6	1.9
Other operating expenses.....	6.8	10.9
Total.....	25.2	34.0
Selling expenses:		
Advertising.....	5.0	4.7
Transportation (to wholesale warehouses).....	3.0	4.0
Other selling expenses.....	2.5	3.2
Total.....	10.5	11.9
Profits and taxes:		
Income tax.....	3.0	6.5
Net profit, after taxes.....	4.8	6.3
Total gross profits.....	7.8	12.8
Value of sales.....	100.0	100.0

Sources: Standard and Poors, 1961 Industrial Surveys, Census of Manufactures, and estimates by the author.

In addition, increasing margins reflect both the direct costs of non-price competition and the indirect costs of consumer preference. Many companies have organized extensive research departments to develop new equipment as well as new products. Because the performance of the breakfast food industry is characterized by a large number of differentiated products, much of the equipment used in manufacturing is invented in their own workshops.

The effectiveness of the research and development staffs on the performance of the industry was demonstrated when at least 12 new types of breakfast foods were successfully marketed from 1959 to 1961 (4). The cost of maintaining a staff of research and development personnel and the cost of designing and building equipment have been increasing along with other costs.

Quality control programs are also costly. The breakfast foods industry is constantly trying to improve the quality of its food products. Such measures as dust collection systems, metal detectors, weight checks, and standards for color, textures, taste, and size are considered important items of quality control by the industry. Costs incurred to assure quality are in the form of added labor and equipment costs and in the loss of food products that fail to measure up to rigid standards for food uses.

Consumer preference for breakfast foods in small packages also has added to the manufacturers' costs. More labor and a larger amount of paperboard is required per ounce of net weight to package small quantities and variety packs. This added cost to manufacturers is reflected at the retail level where the price per net ounce in small packages is more than double the price in large packages.

Although costs vary from company to company depending upon the type of cereal produced, the itemized list of costs in table 7 is believed to be representative of the breakfast foods industry. This list is based on the total compiled receipts of the breakfast foods industry which increased from about 222 million dollars in 1947 to nearly 500 million dollars in 1961.

Net Profit

The average net profit after taxes in the breakfast foods industry was estimated at 6.2 percent of total sales in 1961. This percentage rose annually from 1951 to 1958. Since 1958, profits as a percentage of total sales apparently have leveled off (fig. 3) (4). These profit rates were sharply higher than the average profits of 45 leading food manufacturers for which data are available.

Profit margins vary widely among companies, depending primarily on the proportion of breakfast food items to the total items produced. Companies that specialize largely in the manufacture of breakfast foods consistently have larger profits than companies whose breakfast food items are only a small percentage of their total product mix. The range in net profits for 1960 was reported to be from 3.5 to 8.4 cents per dollar of sales (4). Net profits of corn flakes manufacturers are slightly higher than the average for the industry, while net profits of rolled oat manufacturers are slightly lower than the average.

Wholesale Margins

The total increase in gross margin of a 12-ounce package of corn flakes at the wholesale level was 2.0 cents, or about 154 percent, from 1947-49 to 1961. The

PROFITS OF BREAKFAST FOOD MANUFACTURERS

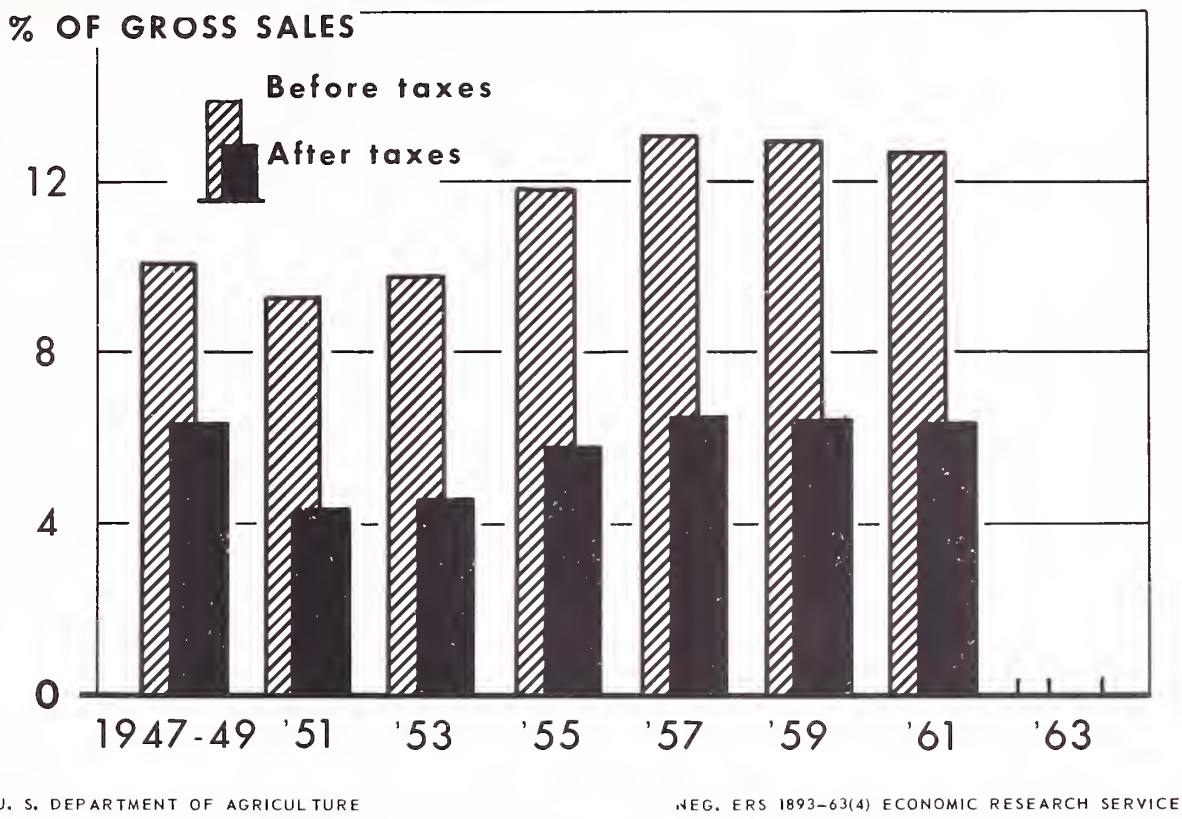


Figure 3

increase in gross margin of an 18-ounce package of rolled oats was 1.9 cents, or about 136 percent, in the same period.

Wholesaling in the breakfast foods industry may involve a change in ownership of the product or it may be a part of the manufacturers' operation. The costs apportioned to this marketing function increased rapidly from 1947-49 to about 1958, but since then the wholesale margin has become relatively stable. Large distribution centers have been established nearer the consumption areas. These large wholesaling centers require less labor per unit handled. Also, they have enabled manufacturers to take advantage of car load rates, thus lowering transportation costs. These changes have been partially responsible for stabilizing wholesale margins since 1958.

Retail Prices

In 1961, retail prices of corn flakes and rolled oats rose to the highest levels in history (fig. 4). Consumers in 1961 paid an average price of 26.4 cents for a 12-ounce package of corn flakes, and 22.4 cents for an 18-ounce package of rolled oats. For both corn flakes and rolled oats, this was 54 percent above the 1947-49 level.

Wholesale prices did not increase as much during this period as retail prices. Wholesale prices for corn flakes increased about 43 percent and for rolled oats about

PRICES OF BREAKFAST FOODS

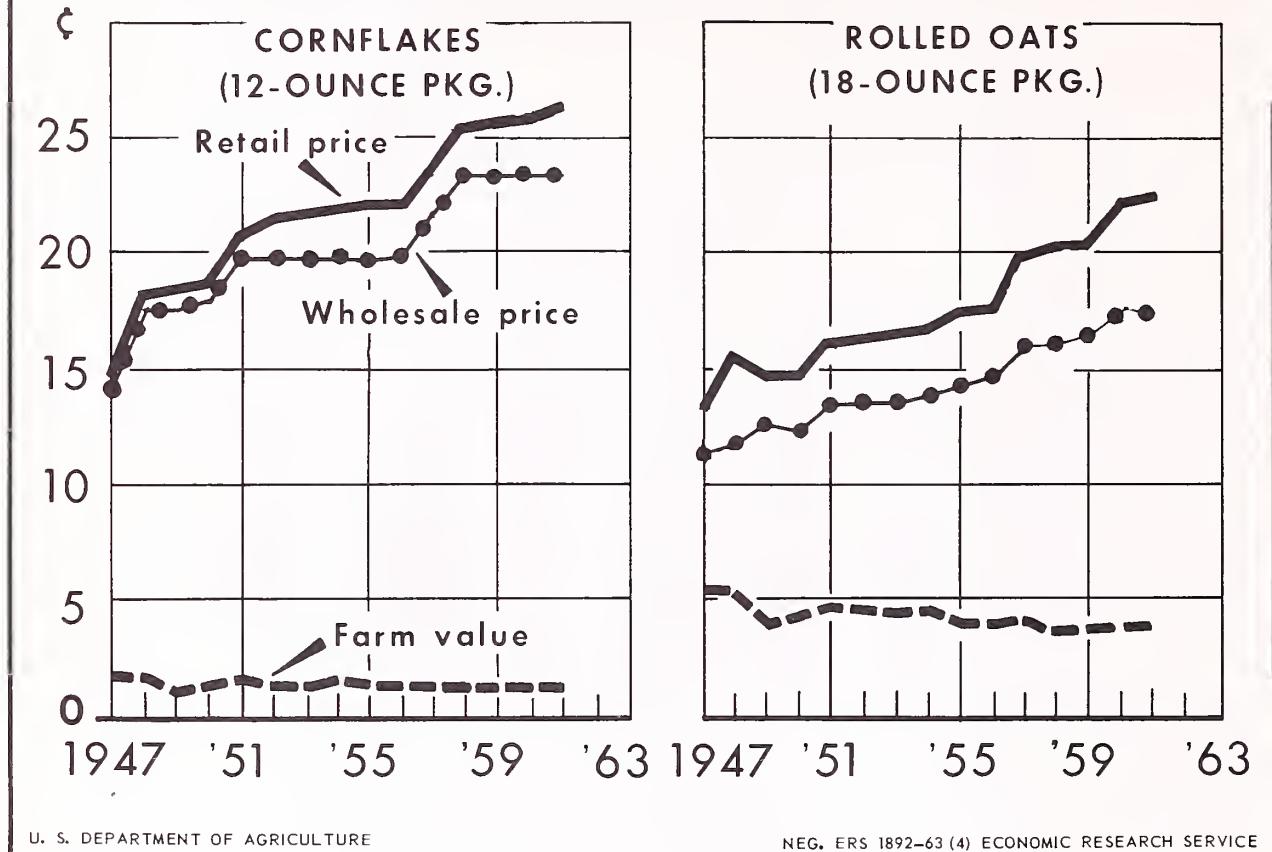


Figure 4

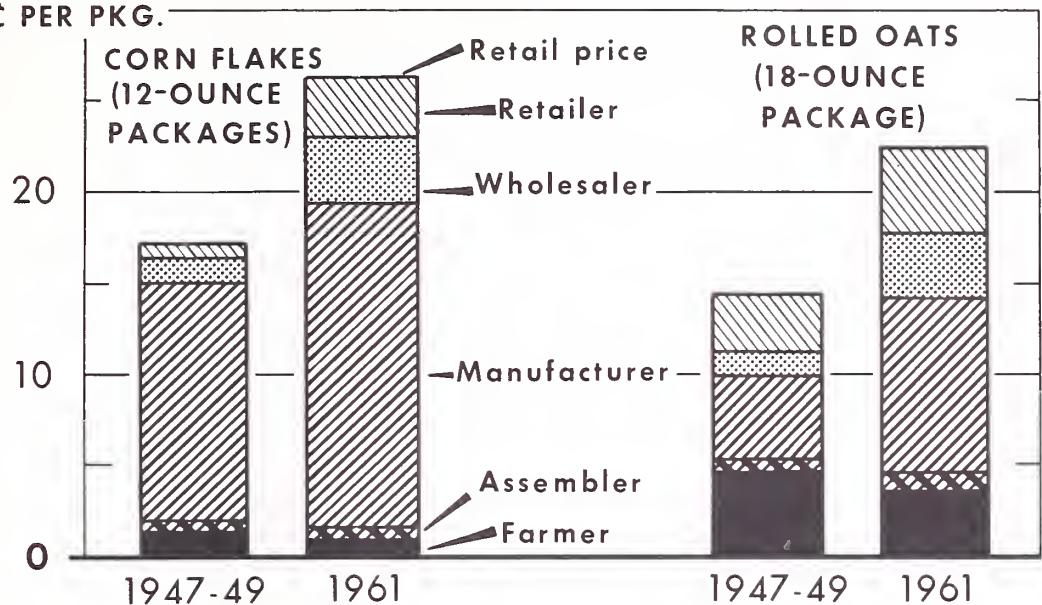
49 percent. Thus, the retailing margin has become an important cause of the increasing farm-retail price spread. The retail margin increased 288 percent from 1947-49 to 1961 for corn flakes and about 81 percent for rolled oats. The much larger percentage increase for corn flakes stems from the fact that the retail margin in the base period was much lower for corn flakes (0.8 cents) than for rolled oats (2.6 cents). From the base period to 1961 the rise in the margins was almost equal (2.3 cents for corn flakes and 2.1 cents for rolled oats) (tables 5 and 6).

As a percentage of the retail price, the retail margin for corn flakes increased from about 5 percent in 1947-49 to 12 percent in 1961. The rolled oats retail margin as a percentage of the retail price increased only slightly, from 18 to 21 percent, in the same period.

The magnitude of the increase in the retail price from 1947-49 to 1961 may be seen in figure 5. Changes in the distribution of the retail price by agencies are indicated for both the 12-ounce package of corn flakes and the 18-ounce package of rolled oats.

DISTRIBUTION OF RETAIL PRICE OF BREAKFAST FOODS

¢ PER PKG.



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Figure 5

DISTRIBUTION OF THE CONSUMER'S BREAKFAST FOOD DOLLAR

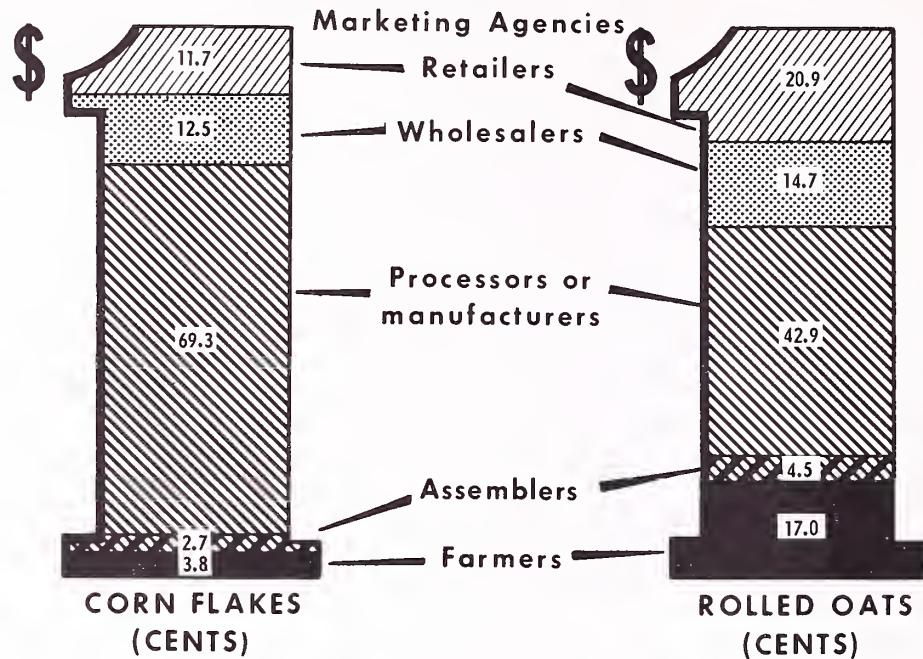
Retail prices of both corn flakes and rolled oats increased 54 percent from 1947-49 to 1961. Some of the margins within the overall spread increased much more, but during this same 15-year period the farm value of corn and oats decreased. The marketing margin for corn flakes increased from 15.6 cents in 1947-49 to 25.4 cents in 1961 and the oats marketing margin increased from 9.6 cents to 18.6 cents.

Increasing manufacturers' cost margins took a large share of the consumer's dollar (fig. 6). In 1961, processors and manufacturers received an estimated 69.3 cents of the consumer's corn flake dollar and 42.9 cents of the consumer's rolled oats dollar. Apparently, a separation of processing and manufacturing functions and higher manufacturing costs of the ready-to-eat varieties are the major factors explaining why processing and manufacturing takes more of the consumer's corn flake dollar than of his rolled oats dollar.

Retailers took a much larger share of the consumer's dollar than farmers, especially for rolled oats. Assemblers took smaller portions of the consumer's dollar for both products than did other marketing agencies.

The retail margin appears to be high for rolled oats. In 1961, it was nearly double the corn flake margin (fig. 6). A rolled oats margin in line with the corn flakes margin would lower the cost to the consumer and could possibly increase the farmer's

WHERE THE CONSUMER'S BREAKFAST FOOD DOLLAR GOES, 1961



U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 1891-63 (4) ECONOMIC RESEARCH SERVICE

Figure 6

share. Apparently because of the inelasticity of demand, retailers are able to command high margins without a serious loss of sales.^{6/} This is quite possible because of the difference in products. Substitution is probably not as great between these two breakfast foods as, for example, between corn flakes and another ready-to-eat breakfast food.

Less to Farmer

The farm value of a 12-ounce package of corn flakes decreased from 1.5 cents in 1947-49 to 1.0 cent in 1961 and the farm value of an 18-ounce package of rolled oats decreased from 4.9 cents to 3.8 cents in the same period (fig. 5). In 1961, the farmer received only 4 percent of the retail price of corn flakes and 17 percent of the retail price of rolled oats. This was considerably less than in 1947-49 when he received 9 percent of the retail price of corn flakes and 34 percent of the retail price of rolled oats. The farmers' share of the retail price in 1961 was the smallest since 1932.

^{6/} Although referred to as a high margin, in 1961 the average U. S. price of an 18-ounce package of rolled oats was 22.4 cents or 1.24 cents per ounce as compared to 2.12 cents per ounce of a 12-ounce package of corn flakes.

Because corn and oats are predominantly feed grains, the farm value of these grains channeled to cereal manufacturers is closely related to farm prices of all corn and oats. Prices of food-quality corn and oats are apparently affected more by rigid price differentials based on quality than by demand by the breakfast food industry. Thus, as supplies of feed grains have increased in recent years, both prices received by farmers and costs of corn and oats to the manufacturers have decreased. The decrease in price also indicates a lack of farmer bargaining power relative to the breakfast foods industry.

EFFECT OF FARM PRICES ON FARM VALUE

Since corn and oats constitute nearly the entire input value of corn flakes and rolled oats, respectively, it would be expected that a change in farm prices would have a large effect on the farm value of corn flakes and rolled oats and in turn a direct effect on retail prices. This is more nearly true for rolled oats than for corn flakes. When oats are processed they yield nearly 50 percent rolled oats; this primary product represents about 80 percent of the value.^{7/} Should the farm price of oats increase 25 cents a bushel, the resulting increase in farm value of an 18-ounce package of rolled oats would be 1.2 cents, assuming an original farm price of 63 cents per bushel.

Corn has a much lower yield of primary products, about 30 percent, and a change in corn prices does not affect the farm value of corn flakes as much as a change in oat prices affects the farm value of rolled oats. Should the farm price of corn increase from \$1.00 to \$1.25 per bushel, the farm value of a 12-ounce package of corn flakes would increase 0.25 cent. Thus, a 25-cent increase in the price of corn has about one-fifth the influence on the farm value of corn flakes as does an equal change in oat prices.

White corn is the most desirable type of corn for producing corn flakes which are the predominant corn breakfast food. Presently there is an insufficient supply for manufacturing corn flakes. Thus, a potential market is available for the production of a differentiated product. Assuming enough farmers within a given area would be willing to produce white corn, a possible contractual agreement between them and the breakfast food manufacturers might be worked out. This could result in a premium price to the farmer and in turn a larger share of the consumer's dollar.

^{7/} Percentage values of primary products change when prices of any joint product changes. Farm values of corn and oats are calculated as follows: The farm price per bushel is multiplied by the percentage value that primary products are of all joint products at a given time. In turn, this sum is multiplied by the equivalent of a given unit of corn flakes or rolled oats. (equivalent of a 12-ounce package of corn flakes is .0513 bushel and of an 18-ounce package of rolled oats, .0722 bushel.) For additional methodology used to compute farm value, see appendix.

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APPENDIX

Definitions

Breakfast Food Manufacturers are those who manufacture cereals and related preparations primarily from grains. Establishments engaged in manufacturing hominy grits, corn meal for human consumption, and cereals for infants are not included. According to the Bureau of Census 1958 Census of Manufactures, the industry's shipments of cereal preparations (primary products) in 1958 represented 80 percent (specialization ratio) of both primary and secondary product shipments. The industry specialization ratio in 1954 was 77 percent.

Breakfast food also may be referred to a "cereal breakfast food" or "cereal." While cereal also refers to a number of grains and the grasses on which they are produced, it is used in this report only in reference to breakfast foods.

Ready-to-eat breakfast foods are those which require no cooking. Corn flakes are considered a ready-to-eat cereal. Others include wheat flakes and other wheat breakfast foods, preparations of oats and rice and mixed grains, and other corn breakfast foods. The term cold cereal may be used interchangabley with ready-to-eat breakfast foods.

Cooked breakfast foods are those that require cooking. They include, in addition to rolled oats, farina and other wheat foods, oatmeal, and preparations from other grains and mixed grains. The term hot cereal also refers to cooked breakfast food.

Farm value is the value of the farm product equivalent of a unit of the product for which the retail price is quoted. It is computed by multiplying the farm product equivalent by the farm price per unit and subtracting the value of by-products obtained in processing.

Farmer's share is the percentage the farm value of a product is of the retail price paid by the consumer.

Joint products include the primary product and all secondary products obtained by processing a raw material.

Assembler's margin includes the costs of all services of assemblage rendered by country, subterminal, or terminal elevators, dealers, brokers, and others involved in accumulating supplies of raw materials.

Explanation of Methodology

Much of the discussion of the structure of the industry is based on the latest Census of Manufacturers report which was published in 1960, but based on 1958 data. This was supplemented by more recent data, as indicated by the literature cited.

The flow of breakfast foods was determined primarily from unpublished 1960 data.^{8/} This was supplemented with findings through personal interviews and several sources (1, 11, and 13). The flow diagram gives the channels of the three major grains, which account for nearly 90 percent of the breakfast foods manufactured.

^{8/} Unpublished report by North Central Grain Marketing Technical Committee cited in footnote 4, page 5.

The section on manufacturing margins gives a breakdown of all major cost items. These costs are shown as a percent of the total receipts of the manufacturers. They are based on the Census of Manufacturers (9, 10, and 11) cost breakdown for the breakfast foods industry and are supplemented with information taken from Standard and Poors Industry Surveys, November 1961, and by knowledge gained through personal interviews with members of the industry.

Time series (1919-56) of farm values of corn flakes and rolled oats are given in Farm-Retail for Food Products, U. S. Dept. Agr. Mktg. Res. Rpt. 741, 1957, and Supplement for 1956-60 thereto, 1961. For rolled oats the farm values given in the time series and in table 6 of this report, are based on the following yields from a bushel of oats: 15.6 pounds of rolled oats, 5.2 pounds of stub oats, and 10.2 pounds of oat millfeed, with a 1-pound loss. Based on this yield of rolled oats, an 18-ounce package of rolled oats requires 2.31 pounds of oats or 0.0722 bushel. While the yield of rolled oats is about 50 percent of the total volume, the value is equal to about 80 percent of the value of all joint products. Rolled oats have a high farm value compared to corn flakes and other grain mill products.

For corn flakes the farm value as given in Mktg. Res. Rpt. 741 and its supplement differ from the farm value shown in table 5. The farm value shown in table 5 is based on the following yields of yellow corn: 17 pounds flaking grits, 19 pounds hominy feed, 16 pounds brewers grits, 2 pounds corn meal and flour, 0.6 pound of crude corn oil, and 1.4 pounds loss. Based on this yield of flaking grits and on 86.1 percent yield of corn flakes from flaking grits, a 12-ounce package of corn flakes requires 2.87 pounds of corn or 0.0513 bushel. While the yield of flaking grits is 30 percent of the total volume, the value is equal to only 20 percent of all the joint products. Thus, corn flakes have a low farm value compared to rolled oats and other grain mill products.

Farm values of corn flakes, as given in Mktg. Res. Rpt. 741, are based on the following yields of white corn: 31 pounds of flaking grits, 20 pounds of hominy feed, 2 pounds corn flour, 0.5 pound crude corn oil and 2.5 pounds loss. Thus, the yield of yellow corn is considerably different from the yield of white corn.

Cereal manufacturers changed over to yellow corn during World War II because of a short supply of white corn. Since yellow corn is bred primarily for animal feed it is not as well suited for manufacturing flaking grits and in turn corn flakes. The yield of usable flaking grits is lower and yields of other joint products are higher. The yield of yellow flaking grits is lower because the poor texture results in crumbling. Once a flaking grit crumbles it will no longer produce a large flake.

Sources and methodology used in constructing tables 5 and 6 are further explained in the footnotes to those tables.

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